

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-29 (canceled).

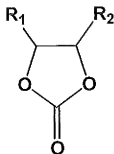
Claim 30 (previously presented). A method of forming a polyurethane-based polymer comprising the steps of:

- (a) mixing one or more polymerisable organic materials having at least one cyclocarbonate group with at least one natural or synthetic, modified or unmodified nano-clay having a platelet thickness of less than 25 Å and an aspect ratio higher than 10 or a nanocomposite formed from the nano-clay; with at least one hardener to form a composition; and
- (b) curing the composition to form the polyurethane-based polymer and wherein the polyurethane-based polymer is a non-isocyanate-based polyurethane polymer.

Claim 31 (new). A non-isocyanate based polyurethane obtained from the reaction of:

- (a) one or more polymerisable organic materials having at least one cyclocarbonate group;
- (b) at least one nano-clay having a platelet thickness of less than 25 Å and an aspect ratio higher than 10 or a nanocomposite formed from the nano-clay;
- (c) at least one hardener; and optionally
- (d) a compound containing one or more epoxy groups.

Claim 32 (new). The non-isocyanate based polyurethane of claim 31 wherein component (a) is a compound of formula I:



(I)

wherein R₁ and R₂ are each independently hydrogen, or a linear or branched, or cyclic, saturated or unsaturated group optionally substituted with one or more heteroatoms, oxygen-containing groups or nitrogen-containing groups.

Claim 33 (new). The non-isocyanate based polyurethane of claim 31 wherein component (b) is present in an amount of from 0.1 to 95% w/w based on the total weight of the composition.

Claim 34 (new). The non-isocyanate based polyurethane of claim 31 wherein component (b) is present in an amount of from 4 to 20% w/w based on the total weight of the composition.

Claim 35 (new). The non-isocyanate based polyurethane of claim 31 wherein the nano-clay has aspect ratio higher than 50.

Claim 36 (new). The non-isocyanate based polyurethane of claim 31 wherein the thickness of the nano-clay platelets is less than 10 Å.

Claim 37 (new). The non-isocyanate based polyurethane of claim 31 wherein the nano-clay is a natural or modified bentonite, saponite, hectorite, montmorillonite or synthetic mica fluoride.

Claim 38 (new). The non-isocyanate based polyurethane of claim 31 wherein the nano-clay is a natural or modified montmorillonite.

Claim 39 (new). The non-isocyanate based polyurethane of claim 31 additionally containing one or more reinforcement fibres and/or one or more toughening agents.

Claim 40 (new). The non-isocyanate based polyurethane of claim 31 additionally containing one or more fillers and/or one or more pigments.

Claim 42 (new). The non-isocyanate based polyurethane of claim 31 additionally containing one or more drying agents, and/or one or more stabilizers, and/or one or more surface tension modifiers.

Claim 43 (new). The non-isocyanate based polyurethane of claim 31 additionally containing a solvent or a solvent mixture.

Claim 44 (new). The non-isocyanate based polyurethane of claim 31 additionally containing a diluent or a diluent mixture.